

CREDIT-BASED RECEIVER USING SELECTED TRANSMIT RATES AND STORAGE THRESHOLDS FOR PREVENTING UNDER FLOW AND OVER FLOW – METHODS, APPARATUS AND PROGRAM PRODUCTS

ABSTRACT

A receiver may be adapted to prevent overflow or underflow of its data storage by generating a transmit rate value as a feedback to the sender. Speed adjustments are performed periodically with a fixed time period denoted by Dt . Transmission rates are explicitly 0, $Max/2$, and Max . The receiver queue is itself drained at a rate R that at any time satisfies $0 \leq R \leq Max$. The level of occupancy of the receiver storage queue is denoted by Q . The maximum capacity of the receiving queue is designated Q_{max} , so at any time, $0 \leq Q \leq Q_{max}$. Two thresholds $T1$ and $T2$ (with $0 < T1 < T2 < Q_{max}$) of levels of the receiver queue value Q are determined. A transmit rate is then determined by the level of the receiver queue Q compared to the thresholds. The transmit rate feedback value achieves the desired goal of avoiding overflow and, once the value of Q has been positive at least once, avoiding underflow.